

DEPARTMENT OF CONSERVATION
DIVISION OF OIL AND GAS
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U.S.E.P.A.
REGION 9
COMM CNTR



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March 29, 1982

Mr. Nathan Lau
U. S. Environmental Protection Agency
Region IX
215 Fremont Street
San Francisco, California 94105

Dear Mr. Lau:

In response to your request of March 10, 1982 for additional information and clarification of Division of Oil and Gas authority, practices, and aquifer exemptions for underground injection projects, the attached data is submitted for your review.

Attachment 1 is a response to the questions on authority and practice that were submitted to the CDOG by the EPA.

Attachment 2 is a table of the proposed nonhydrocarbon-producing aquifers that are proposed to be exempted per the Division's application for primacy. The table shows, in part, the amount of total dissolved solids (TDS) of the water in the aquifers prior to injection and of the water injected.

If you have further questions, please let me know.

Sincerely,

A handwritten signature in cursive script, appearing to read "M. G. Mefferd".

M. G. Mefferd
State Oil and Gas Supervisor

Attachments (2)

cc: Greg Williams, SWRCB

Section

A. Structure, Coverage, and Scope of the State Program

1. Section 3224 of the California Public Resources Code (CPRC) speaks of ordering necessary tests and remedial work to "...prevent the infiltration of detrimental substances into underground or surface water suitable for irrigation or domestic purposes...". Section 3106 states that the Supervisor must prevent damage to "natural resources...and damage to underground and surface water suitable for irrigation or domestic purposes...". Are these two assertions the legal equivalent of endangering drinking water sources as used in Section 1421(b)(1)(B) of the SDWA?

Yes. The California Public Resources Code (PRC) states that any water that is considered to be usable for domestic purposes, which certainly includes sources of drinking water, must be protected.

In addition, the policy statement contained in the Memorandum of Agreement between the EPA and the CDOG states that the purpose of the program is to prevent any underground injection that endangers underground sources of drinking water (USDW). By signing the MOA and applying for primacy for Class II wells, the CDOG and the State has demonstrated their intention to protect USDW's as defined in the SDWA.

2. Section 1723.2 of Title 17, California Administrative Code (CAC) uses the term "fresh water" which is not defined. This term must be clarified by either the Attorney General or the Division of Oil and Gas.

As indicated in our response to Question 1, water used for domestic purposes includes sources of drinking water. Therefore, water used for domestic purposes would include "fresh water". The specific TDS is not assigned to the terms "domestic" or "fresh"; however, the CDOG is mandated by these terms to protect any waters that a water quality control agency determines to be usable. For this specific case, the SDWA states that waters of 10,000 TDS or less must be protected. As stated in the MOA, the CDOG will protect USDW's.

3. Under Section 3106 of the CPRC, the Supervisor must prevent, as far as possible, damage to natural resources, etc. Does the policy and operational history indicate a broad or narrow interpretation of "as far as possible"?

"As far as possible" is interpreted broadly. For example, Section 3013 of the PRC, which is used as a primary authority

for promulgation of regulations, states that "This division shall be liberally construed to meet its purposes, and the director and the supervisor shall have all the powers which may be necessary to carry out the purposes of this division." (Emphasis added) (See page D-1 of the Application for this statute.)

In addition, Section 3224 states that the Supervisor can order tests or remedial work that in his judgment are necessary to prevent damage to life, health, property, and natural resources. (See pages 20 and D-5 of the Application.)

4. The Program Description does not discuss implementation of primacy to extend to protecting offshore aquifers. This should be clarified.

Division of Oil and Gas mandates to protect life, health, property, and natural resources (Sec. 3106) apply to offshore resources as well as onshore. The CDOG has jurisdiction throughout the State of California, which extends offshore to the three-mile limit. Therefore, the Application is considered to apply to the protection of offshore aquifers that are USDW's.

5. If the state has or claims authority over Indian lands, citation or explanation of such activity should be evidenced.

The State does not claim authority over Indian lands, and this fact is stated also in the MOA (IIA).

6. Section 1724.6 of the CAC requires the Division's approval prior to subsurface injection or disposal and requires the operator to provide such data as the Supervisor deems pertinent and necessary for proper evaluation. Assuming that "damage to water suitable for irrigation or domestic purposes" is analagous to endangering drinking water sources, this places the burden on the applicant. This should be clarified.

The burden is placed upon the applicant to provide data that will be used as an aid to evaluate proposed injection projects. Section 1724.7 details the data that are required to be submitted to the Division before approval can be given to inject fluids. Additional data may also be requested of the operator for projects that are large, unusual, or hazardous; for projects that are on unusual or complex structures; and for projects that contain critical wells. (See page D-17 of the Application for a listing of the data to be submitted.)

7. Is the data required under Section 1724.7 sufficient to make a judgment on endangerment as prescribed in Section 1421 of the SDWA?

Yes. Using the engineering and geologic data in conjunction with information contained in the files of the CDOG to

evaluate a project is sufficient to ensure that underground sources of drinking water are protected. Additional data are requested of the operator when necessary to ensure protection of USDW.

8. The term "person" as defined in Sections 3010 and 3011 of the Public Resources Code must include Federal Agencies as required by 1421 (b)(1)(D)(i). This should be verified by demonstrations of statutory or case law by the Attorney General.

See attached letter dated 8-24-81 from the Attorney General. The letter verifies that "Federal Agencies" are included in the definition of "person".

9. The State's authority over activities on property owned or leased by the Federal Government should be verified by demonstration of statutory or case law.

See attached letter dated 8-24-81 from the Attorney General. The letter verifies such authority.

B. Description of the State Permitting Process

1. Any differences between a permit and an order should be clarified.

Upon receipt and review by the Division of an application or notice of intent to drill, rework, inject, etc., the Division will generally issue a permit that will allow an operator to perform the work. The permit contains conditions that the operator must adhere to.

If an operator fails to adhere to the conditions of the permit, the Division may order the operator to perform the work, and if the work is not done, the Division will cause the work to be performed by third parties. The operator would then be subject to a lien to pay for the work.

The Division may also order tests or remedial work to be performed that in its judgment are necessary to prevent damage to life, health, property, and natural resources.

2. Section 3203 of the CPRC states that applications not responded to within 10 days are deemed approved. What is the practical effect of this rule based on operational history?

As a matter of practice, the CDOG responds to all notices within the 10 days; however, Section 3203 does not say that a notice must be approved within the 10 days -- only a response must be made. The response may only specify a reason the approval cannot be made within 10 days. For

instance, additional information may be necessary or an environmental review may be required by a local agency prior to the Division approval.

3. Section 3229 CPRC states that a "notice of intent to abandon" not responded to in writing within 10 days shall be deemed to be approved. What is the practical effect of this rule on the operational history?

As a matter of practice, all notices to abandon are responded to within 10 days. If there ever is a reason that a notice cannot be approved within 10 days, the Division will respond to the applicant and state the reason for the delay. This type of response will prevent the "notice of intent to abandon" from becoming a written report of the Supervisor.

H. Description of Rules Used by the State to Regulate Class II Wells

1. Section 17²/₂ of the CAC permits the establishment of field rules and permit exceptions to be made for casing and cementing requirements. Are these consistent with the overall requirements to protect water suitable for irrigation or domestic purposes?

Yes. The establishment of field rules does not have a negative impact on the Division's mandate to protect life, health, property, and natural resources. In fact, the establishment of field rules could even enhance the protection of USDW's if such rules were made to provide a higher level of protection. Field rules never provide a lower level of protection of USDW's; they merely adjust existing requirements to site-specific needs.

K. Monitoring, Inspection, and Reporting

1. There is no indication of how the Division keeps records or how often inspections are actually made or by whom.

The CDOG keeps a complete record of the history of every well drilled in California. This record contains all notices to perform work; responses to such notices; inspection reports; the mechanical condition of the well -- cementing, plugging, casing, and perforating; and production and/or injection volumes. These records are kept permanently (see page 17 of the Application).

As indicated on pages 17-19 of the Application and in Sections 1723.7 and 1724.10(j) of the CAC (pages D-15 and D-18 of the Application), a listing is presented of the tests and plugging operations that require witnessing and approval by a Division employee.

On pages 24 and 25 of the Application, it is stated that Energy and Mineral Resources Engineers, Petroleum Technical Assistants, or Junior Engineering Technicians conduct the required tests and inspections on a 24-hour basis, seven days a week. The minimum qualifications for these positions are also presented on pages 24 and 25.

2. Though the necessary authorities exist for inspection, monitoring, record keeping, and reporting, is there any independent verification of the accuracy of the reports, actions, and data?

Yes. Division inspectors collect all pertinent data during well inspections and the witnessing of tests. These data are compared with the records filed by the operator. Spot audits of production and project reviews are also conducted by Division engineers to verify data.

3. Sections 1724.7(c)(3) and 1724.10(c)-(j) address monitoring. These requirements may be modified for good cause. What have been and are the effects and conditions of modification?

As mentioned in previous answers and in the Application, the CDOG has a mandate to protect waters suitable for irrigation and domestic use. Any modification that may be made by the CDOG regarding the monitoring of injection projects will not have a negative impact on the CDOG or the operator to effectively monitor injection projects. Modifications are merely adjustments to site-specific conditions.

L. Enforcement Program

1. It is not clear as to what enforcement mechanisms the State has available for action against either repeat or very serious violators. Can actions be taken in situations where a willful violator waits until a State compliance order is issued before correcting a serious violation? Does the State have discretion to seek penalties for the past violations even if the operator complies with the subsequent State order?

Section L of the Division's Application explains the actions that the CDOG can take to enforce the laws and regulations relating to the production of oil and gas or to the injection of fluids.

As stated in section L, the CDOG can order the immediate shutdown of any operation that contributes to the degradation of fresh waters (USDW's). A formal order does not have to be issued before the shutdown occurs, only written notification from the CDOG is necessary. In fact, this provision is listed as one of the conditions of the permit that is issued to an operator to inject fluids. (See condition 2 of the example on page C-7, and Section E, Termination of Permits, page 10 of the Application).

If an operator repeatedly or willfully violates injection requirements, the CDOG can order the operator to cease injection operations. Again, this is a condition of the permit. If the operator refuses to cease operations, legal action can be taken.

Section 3236 (page D-6) states that any person who violates,

fails, neglects, or refuses to comply with any provisions of this chapter, ...is guilty of a misdemeanor. This provides the Division with the authority to seek penalties for past violations, even if the operator complies with the subsequent State order.

M. Aquifer Exemption Process

1. Are aquifer exemptions granted for mineral-bearing or mineral-producing aquifers?

Aquifer exemptions will be granted for hydrocarbon-producing aquifers and aquifers that are currently being used for injection purposes. Both of these types of aquifers are subject to EPA approval, as specified in the MOA.

2. Under Sections 3013, 3106, and 3255 of the CPRC, the Supervisor is given broad authorities, including that over the aquifer exemption process. The Program Description or Memorandum of Agreement should spell out specific policies, requirements, and procedures (e.g., public notice, public participation, criteria) for aquifer exemptions.

Public participation for the aquifer exemption process will be conducted in the same manner as public participation for injection project approvals. Public notices will be published in appropriate newspapers. The notices will indicate that interested parties will have 15 days to provide comments on any proposed aquifer exemptions. The content of the responses to the published notices will be used to determine if a public hearing is necessary to receive additional comment and information. Any public hearings will be conducted in the district in which the aquifer proposed to be exempted is located.

R. Public Participation

1. The policies for public notification should be more clearly stated as it relates to new projects and substantial modifications of existing permits.
2. The specific procedures for public participation should be provided.

See the response to question M. 2 and Section R (page 26) of the Application.

3. A brief operational history of the public participation effort should be provided.

There is no prior history for public participation in project approvals. Public notice for these projects were not required; however, by means of the CDOG Application for Primacy for Class II Wells, the CDOG has agreed to give notice and opportunity for public hearings, as described in Sections M (page 22) and R (page 26), for all project applications and aquifer exemptions.

S. Complaint Response Procedures

1. Only written complaints by adjacent landowners or operators within one mile are required to be investigated. What is the policy for treating informal complaints? What is the operational history?

As described in Section S (page 26), all informal complaints are investigated by the District Deputy and his staff. In summary, if the complaint is found to be justified, then corrective and enforcement measures will be handled in the same manner as formal complaints.

NONHYDROCARBON-PRODUCING ZONE INJECTION DATA

<u>DIST.</u>	<u>FIELD</u>	<u>FORMATION & ZONE</u>	<u>TDS OF ZONE WATER PRIOR TO INJECTION</u>	<u>TDS OF INJECTED WATER</u>	<u>VOLUME INJECTED (Barrels)</u>	<u>INJECTION STARTED</u>	<u>REMARKS</u>
1	Belmont Offshore	Repetto	30,800				
1	Huntington Beach	Lakewood					
		Alpha 1	37,200				
		Alpha 2	12,500				
1	Sawtelle	Puente	25,500				
1	Seal Beach	Repetto	29,700				
		Recent Sands	30,200				
1	Wilmington	Gaspur	28,200				
1	"	River Gravels	30,800				
2	Ramona	Pico	5,000	15,300 ppm NaCl	1,793,000	6/51	
2	South Tapo Canyon	Pico	1,900 ppm NaCl	600 ppm NaCl	1,903,000	1/48	
2	Oat Mountain	Undiff.	4,800	23,800 ppm NaCl	91,000	4/56	
2	Simi	Sespe	4,300	25,500 ppm NaCl	695,000	6/48	
3	Guadalupe	Knoxville	30,500				
3	Lompoc	Lospe	119,000				
3	Lompoc	Knoxville	30,500				
3	Russell Ranch	Branch Canyon	13,000				
3	San Ardo	Santa Margarita	3,700	5,600	81,800,000	11/66	
3	"	Monterey "D" Sand	4,600	5,600	13,795,000	7/59	
3	"	Monterey "E" Sand	6,400	5,600	6,057,000	3/68	
3	Santa Maria Valley	Lospe-Franciscan	119,000				
3	Monroe Swell	Santa Margarita	3,700 ppm NaCl	9,600	?	1981	
3	Point Conception	Camino Cielo	26,200				
3	Guadalupe	Franciscan	30,500				
4	Bellevue	Etchegoin	26,500 (Analysis from adjacent field)				
4	Bellevue, West	Tulare	12,000*				
4	"	Etchegoin	26,500 (Analysis from adjacent field)				
4	Blackwell's Corner	Tumey	2,100 -2,600*	29,000 ppm NaCl	400,000	5/75	Idle since 1975
4	Buena Vista	Tulare	9,200	5,300-36,500	50,798,000	11/72	11 ppm boron
4	Cal Canal	Tulare-San Joaquin	Excess of 10,000*	22,000	537,000	5/79	
4	Canfield Ranch	Etchegoin	=12,800-26,500 (Analysis from adjacent fields)				

**"S" log calculation

DIST.	FIELD	FORMATION & ZONE	TDS OF ZONE WATER PRIOR TO INJECTION	TDS OF INJECTED WATER	VOLUME INJECTED (Barrels)	INJECTION STARTED	REMARKS
4	North Coles Levee	Tulare	12,900				
4	"	San Joaquin	40,000-45,600				
4	"	Etchegoin	30,100				
4	South Coles Levee	Tulare	12,000-13,300				
4	"	San Joaquin	12,000-16,900				
4	Greeley	Etchegoin	26,500				
4	Kern Bluff	Kern River	= 400- 900	(From Kern River Field) 600	551,500	7/80	
4	"	Vedder	= 7,800-16,100	" 11,700-213,000	4,099,000	3/80	
4	Kern Front	Santa Margarita	2,300	1,100		9/75	
4	Kern River	Chanac	238- 925	374- 865	1,071,000	6/77	Reclamation plant
4	"	Santa Margarita	600- 2,600	475- 16,200	154,994,000	9/73	water injected
4	"	Vedder	7,800-16,200		33,204,000		Scrubber and softener
4	Lakeside	San Joaquin	21,500				effluent injected
4	Los Lobos	Tulare	33,300*				
4	Midway-Sunset	Alluvium	No water	3,600- 25,700		7/59	
4	Mount Poso	Walker	2,800*	830- 1,440	22,632,000	9/75	
4	Mountain View	Kern River	4,660*	1,200- 3,800	3,681,000	12/65	
4	Pleito	Chanac & Kern River	7,900-11,800	12,800-30,800	889,000	8/74	
4	Poso Creek	Vedder	12,500				
4	Rio Viejo	San Joaquin	21,000*				Injection not started
4	Rosedale	Etchegoin	26,500	(Analysis from adjacent field)			
4	Round Mountain	Olcese	2,700	1,337- 1,965	29,797,000	7/74	
4	"	Walker	1,930	1,600- 2,100	203,319,000	8/72	
4	Seventh Standard	Etchegoin	17,100-30,000	(NaCl only)			
4	Strand	Etchegoin	8,600	(NaCl only)	1,195,000	7/62	
				16,500-25,600 (NaCl only)			
4	"	San Joaquin	33,400				
4	Ten Section	San Joaquin	12,900				
5	Burrel	Santa Margarita	35,000	(Analysis from Helm field)			
5	"	Tulare-Kern River	20,500	(Analysis from S.E. Burrel field)			
5	Southeast Burrel	Tulare-Kern River	20,500				
5	Coalinga	Santa Margarita	8,244	3,100- 3,500	(145,000,000	2/63	
5	"	Etchegoin-Jacalitos	2,650- 2,900	2,650-2,700	(2/63	
5	Gill Ranch Gas	Zilch	14,500				

"E" log calculation

<u>DIST.</u>	<u>FIELD</u>	<u>FORMATION & ZONE</u>	<u>TDS OF ZONE WATER PRIOR TO INJECTION</u>	<u>TDS OF INJECTED WATER</u>	<u>VOLUME INJECTED (Barrels)</u>	<u>INJECTION STARTED</u>	<u>REMARKS</u>
✓ 5	Guajarral Hills	Etchegoin-Jacalitos	9,400	20,500	931,000	4/67	
5	Helm	Santa Margarita	35,900		(143,000,000		
5	"	Tulare-Kern River	5,100-23,900	11,600-43,400	(12/52	
5	Jacalitos	Etchegoin-Jacalitos	33,749	5,500 (C1 only)	180,000	10/78	
5	Kettleman North Dome	San Joaquin-Etchegoin	10,000	23,800-31,200	48,608,000	8/64	
5	Raisin City	Pliocene	12,800-34,000				
5	"	Santa Margarita	35,000	(Analysis from Helm field)			
5	Riverdale	Pliocene	4,788-16,200		(72,626,000	7/57	
5	"	Santa Margarita	35,900	(Analysis from Helm field)	(
5	San Joaquin	Pliocene	17,100				
5	San Joaquin, Northwest	Basal McClure	90,000	18,500	Test well-no injection		
5	Turk Anticline	San Joaquin	3,700- 4,440	9,500- 9,800	466,000	11/76	
✓ 6	Bunker Gas	Undiff.	1,200	11,000	388,000	1/75	
6	Grimes Gas	Klone	16,800				
6	Grimes, West, Gas	Klone	34,000*				
6	La Honda (South Area)	Vaqueros	41,000				
6	Lathrop Gas	Starkey	15,400*				
6	River Break Gas	Capay	6,900*	7,000	93,000	7/75	
6	Roberts Island Gas	Undiff.	18,000*				
6	Sutter Buttes Gas	Klone	2,500	4,600-23,000	644,000	7/77	
6	Union Island Gas	Mokelumne River	5,000-6,000*	7,800	471,000	7/77	
6	Wild Goose	Undiff.	2,800-5,000*	21,400	823,000	11/69	

* "E" log calculation

